



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/057,547 | 01/25/2002 | Eric Wolfsgruber | 02-121 | 3047 |

7590 11/16/2005

Gregory P. LaPointe
Bachman & LaPointe, P.C.
Suite 1201
900 Chapel Street
New Haven, CT 06510-2802

EXAMINER

ZIMMERMAN, JOHN J

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,547

Applicant(s)

WOLFSGRUBER ET AL.

Examiner

John J. Zimmerman

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/3/05 (132 declaration).
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-16 and 18-24 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 11-16 and 18-24 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/647,547.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

FIRST OFFICE ACTION AFTER SECOND RCE

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Second Office Action After RCE has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 5, 2005 has been entered.

Preliminary Amendment

2. This First Office Action After Second RCE considers the claims as amended in the Preliminary Amendment received July 5, 2005. Claims 11-16 and 18-24 are pending in this application.

Specification

3. The disclosure is objected to because of the following informalities: It is noted that the specification appears to refer to claims which have been canceled (e.g. page 6, third full paragraph, refers to "claim 6"; page 8, amended first full paragraph, refers to "claim 9"; etc. . .).

Art Unit: 1775

Since the subject matter and numbering of claims may change during prosecution of the application, the specification should not make reference to specific claims. Appropriate correction is requested.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. New claim 23 appears to require that the mold shaped foamed metal body is made from "a metal in the form of a metal powder and is characterized by a homogeneous pore distribution and a density of greater than about 95% of the metal". The current claim construction does not make clear if this density applies to the "foamed metal body" or a precursor to the "foamed metal body". If the density refers to the "foamed metal body", then no support can be found in the original disclosure. The disclosure shows that the recitation of above approximately 95% theoretical density applies to the semifinished product that has not yet been foamed. In addition, the approximately 95% theoretical density semifinished product in the disclosure does not yet contain the fixedly embedded functional structural element. The functional structural element becomes embedded during foaming. In addition, the recitation of "largely homogeneous pores"

Art Unit: 1775

in the disclosure refers to the foamed product and not the semifinished product. Applicant should reconstruct the claim language to clarify these issues.

Claim Rejections - 35 USC § 102/103

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 11-13, 16 and 18-24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Valdo (U.S. Patent 3,848,666).

10. Valdo discloses an article comprising a foamed metal body having embedded metal structural elements (e.g. tubes, blocks or plates) which may or may not extend to the panel's

Art Unit: 1775

surface and which act as reinforcements (e.g. see column 5, lines 8-41). Valdo specifically discusses foaming the panels between molding sheets and then removing the molding sheets (e.g. see column 3, lines 8-40). This forms a mold shaped demolded shaped foamed metal body having non-foamable functional structural elements integrally bonded and fixedly embedded in the foamed body. Further covering layers may be secured to the demolded metal foam panels (e.g. see column 2, lines 20-47). In addition, there is no evidence of record that the molded foamed panels of Valdo before demolding would not read on the physical article described in applicant's claims requiring that the body be sandwiched between two forms made of metal (e.g. see applicant's claims 12, 13). Regarding the limitation "wherein the mold shaped foamed metal body is from metal powder" (e.g. claim 11, lines 2-3; claim 18, lines 2-3), Valdo clearly discloses that methods of making his foamed metal are those methods found in the patents cited in his disclosure (e.g. column 3, line 21 - column 4, line 7). These methods clearly include making foamed metal articles from metal powder (e.g. see Valdo's citations of U.S. Patent 1,642,348; U.S. Patent 2,935,396; U.S. Patent 2,979,392, etc. . .). Therefore it is clear that Valdo teaches to use metal powder processes with sufficient specificity when performing his invention as to anticipate the rejected claims. Regarding claim 23, the recitation of the metal powder and the density of presumably the semifinished precursor before foaming is noted, but has not been shown to distinguish over the reference. Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. 102 or on prima facie obviousness under 35 U.S.C. 103,

Art Unit: 1775

jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977). Regarding claim 24, the method steps are noted, but when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

11. Claims 11 and 18-24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bjorksten (U.S. Patent 3,941,182).

12. Bjorksten discloses an article comprising a foamed metal body having embedded metal structural reinforcing elements which are coated with an adhesion promoting metal coating (e.g. see column 4, lines 34-55). The article is made by sandwiching the foamed composite body between mold walls. A foaming agent is used (e.g. see column 1, lines 31-47). Regarding the limitation "wherein the mold shaped foamed metal body is from metal powder" and the method limitations of claim 24, when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Regarding claim 23, the recitation of the metal powder and the density of presumably the semifinished precursor before foaming is noted, but has not been shown to distinguish over the reference. Trademark Office can require applicants to prove

Art Unit: 1775

that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. 102 or on prima facie obviousness under 35 U.S.C. 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

13. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valdo (U.S. Patent 3,848,666).

14. Valdo discloses an article comprising a foamed metal body having embedded metal structural elements (e.g. tubes, blocks or plates) which act as reinforcements (e.g. see column 5, lines 8-41). Valdo specifically discusses foaming the panels between molding sheets and then removing the molding sheets (e.g. see column 3, lines 8-40). This forms a mold shaped demolded shaped foamed metal body having non-foamable functional structural elements integrally bonded and fixedly embedded in the foamed body. Further covering layers may be secured to the demolded metal foam panels (e.g. see column 2, lines 20-47). Valdo differs from claims 14 and 15 in that Valdo may not disclose any specific embodiments wherein at least one of the two molding sheets is curved. Valdo, however, does disclose that his panels are useful as floor panels, panels in freezing compartments, wall panels and roof panels (e.g. see column 4, line 60 - column 5, line 6) as well as light weight cooling vent units, heat exchange units,

Art Unit: 1775

evaporative units, building heating units and structures for the automobile industry (e.g. see column 1, lines 10-25). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make Valdo's panels in any shape that could be typically found in any of these uses since Valdo discloses these uses to be an end use for his panels. The examiner notes that there is no patentable distinction in forming the panels of Valdo to meet any structural shapes typically found in floor panels, panels in freezing compartments, wall panels, roof panels, light weight cooling vent units, heat exchange units, evaporative units, building heating units and structures for the automobile industry since Valdo intends for the panels to be adapted for these end uses. Regarding the limitation "wherein the mold shaped foamed metal body is from metal powder" (e.g. claim 11, lines 2-3; claim 18, lines 2-3), Valdo clearly discloses that methods of making his foamed metal are those methods found in the patents cited in his disclosure (e.g. column 3, line 21 - column 4, line 7). These methods clearly include making foamed metal articles from metal powder (e.g. see Valdo's citations of U.S. Patent 1,642,348; U.S. Patent 2,935,396; U.S. Patent 2,979,392, etc. . .). Therefore it is clear that Valdo teaches to use metal powder processes with sufficient specificity when performing his invention as to anticipate the rejected claims. In any event, when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q. 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

Response to Arguments

15. Applicant's arguments filed July 5, 2005 have been fully considered but they are not persuasive with regards to the pending rejections.

16. The Declaration Under 37 C.F.R. 1.132 of Dr. Eric Wolfgruber received October 3, 2005 has been carefully considered but the process used in the declaration is not commensurate with the pending claims. The Wolfgruber declaration uses specific alloys, specific foaming agents and specific process parameters. The pending claims, however, are not drawn to specific alloys, foaming agents and/or process parameters. The examiner notes that the use of a single example of a specific metal foam formed from a melt is not necessarily representative of metal foams formed from melts. Nor is a single example of a specific metal foam formed from a powder necessarily representative of all metal foams formed from metal powders. It is not clear how broad generalizations about the density, cell type, modulus of elasticity, compressive strength, yield stress, tensile strength and homogeneity of metal foams from melts and of metal foams from powder can be made on the basis of the two specific examples of the declaration. Such properties of foams can vary greatly depending on the various composition and the various process parameters that one chooses. The pending claims do not require AlSi powder, do not require any particular grain size, do not require any particular foaming agent in any particular amount, do not require compression in a die, do not require densification and do not require specific heating temperatures or heating times. As evidence by Hur (U.S. Patent App. Pub. 2003/0126949), process parameters can greatly affect the size and homogeneity of aluminum foamed from melts (e.g. compare Figures 2 and 3). As evidenced by Knott (U.S. Patent

Art Unit: 1775

5,972,285), the type of pore former used can greatly affect the uniformity and types of cells of a foamed article (e.g. compare Figures 1 and 2). As evidence by Yang (U.S. Patent 5,632,319) foamed metals from melts can be produced with very uniform pore size distribution. As evidence by Allen (U.S. Patent 3,087,807), uniformity of pore size can vary greatly for metal foams produced by metal powder depending on the process parameters. Declaration evidence must be at least reasonably commensurate with the scope of the pending claims. Particularly when it is evident that the various compositions and/or process parameters used in the examples of the declaration may affect the final conclusions, e.g. see *Grasselli*, 713 F.2d at 743, 218 USPQ at 778 (evidence of superior properties for sodium containing composition insufficient to establish the non-obviousness of broad claims for a catalyst with "an alkali metal" where it was well known in the catalyst art that different alkali metals were not interchangeable and applicant had shown unexpected results only for sodium containing materials); *In re Greenfield*, 571 F.2d 1185, 1189, 197 USPQ 227, 230 (CCPA 1978) (evidence of superior properties in one species insufficient to establish the nonobviousness of a subgenus containing hundreds of compounds); *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972) (one test not sufficient where there was no adequate basis for concluding the other claimed compounds would behave the same way). There is insufficient evidence in the declaration that a foamed metal body made from metal powder *in a manner commensurate with the limitations of the pending claims* is patentably distinct over foamed metal bodies made from the processes of the applied prior art.

17. As noted in previous office actions, the limitation "wherein the mold shaped foamed metal body is from metal powder" (e.g. claim 11, lines 2-3; claim 18, lines 2-3) does not

Art Unit: 1775

distinguish over articles disclosed by the Valdo reference. Valdo clearly discloses that methods of making his foamed metal are those methods found in the patents cited in his disclosure (e.g. column 3, line 21 - column 4, line 7). These methods clearly include making foamed metal articles from metal powder (e.g. see Valdo's citations of U.S. Patent 1,642,348; U.S. Patent 2,935,396; U.S. Patent 2,979,392, etc. . .). Therefore it is clear that Valdo teaches to use metal powder processes with sufficient specificity. In any event, when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. 102 or on prima facie obviousness under 35 U.S.C. 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

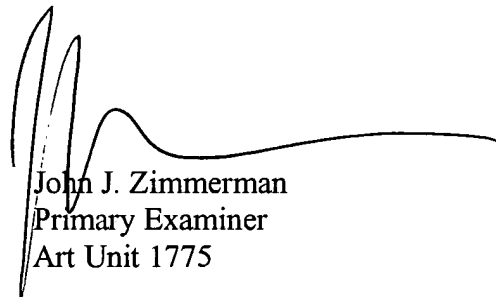
Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Deborah Jones can

Art Unit: 1775

be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John J. Zimmerman
Primary Examiner
Art Unit 1775

jjz
November 10, 2005